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Second record of *Ramularia hypericicola* — collected in Turkey on a new host

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Abstract – *Ramularia hypericicola*, a rare anamorphic *Mycosphaerella* species, is reported and illustrated from Turkey on *Hypericum calycinum*. The Turkish collection represents the second report of this fungus, known hitherto only from the type locality.

Key words — symptoms, *Clusiaceae*, morphology

Introduction

Most species of *Ramularia* are phytopathogenic, causing leaf spots, sometimes chlorosis, or without visible symptoms, occasionally saprobic or hyperparasitic (Braun 1998). Bremer & Petrak (1947) published the first records of *Ramularia* species from Turkey, *R. anatolica* Bremer & Petr. and *R. helminthiae* Bremer & Petr. Subsequent papers about Turkish microfungi, including *Ramularia* species, were published by Bremer et al. (1948, 1952a, 1952b) and Petrak (1953, 1957). Additional Turkish records, of *Ramularia cynarae* Sacc., *R. onobrychidis* Allesch., and *R. sambucina* Sacc., were published by Karel (1958). The relatively small number (nearly 30 species) of *Ramularia* species recorded in subsequent papers (Göbelez 1964) reflects a rather poor degree of research on microfungi on plants in Turkey. However, during the past two decades research on micromycetes (including hyphomycetes) in the country has intensified (Altan & Tamer 1996, Hüseyinov & Selçuk 1999, Braun et al. 2000, Hüseyin & Selçuk 2001, Hüseyinov et al. 2002, Hüseyin et al. 2003, 2005, Melnik et al. 2004, Erdoğdu & Hüseyin 2007, Selçuk et al. 2009, 2010). We describe here one recent collection from Turkey of a *Ramularia* species previously recorded only from Russia.

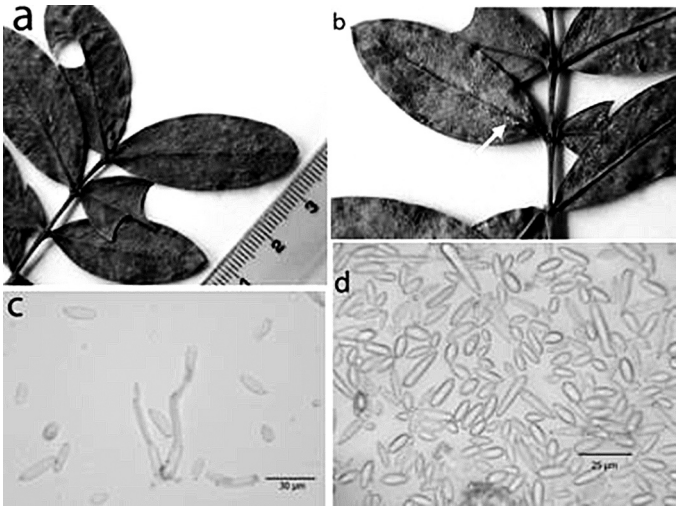

Figure 1. *Ramularia hypericicola* on *Hypericum calycinum*; a, spots on infected host leaves; b, punctiform grayish white caespituli; c, small fasicle of conidiophores; d, conidia.

Material & methods

The plant material was gathered from Gemlik (Bursa Province). The host plant was identified by reference to Davis (1967). Sections of the fungus were hand cut using a razor blade and microscopically examined using a Leica DM LB research microscope. The fungus was identified following Braun (1998). Author abbreviations follow Index Fungorum (2011). All examined specimens are deposited in the herbarium of Ahi Evran University, Arts and Sciences Faculty, Department of Biology, Kırsehir Province, Turkey.

Results

After careful comparison with *Ramularia* spp. described on hosts of *Hypericaceae* based on Braun (1998) the recently collected material on *Hypericum calycinum* from Turkey proved to be clearly identical with *R. hypericicola*. The following description and illustration are based on the Turkish material.

Ramularia hypericicola U.Braun, Monogr. *Cercosporella*, *Ramularia* 2: 170, 1998. Fig. 1

On both surfaces of leaves causing subcircular to irregular, occasionally angular and vein-limited, scattered sometimes confluent spots, covers more than 50% of the surface of some leaflet, firstly 0.5–1 mm across, then up to 10 mm diam. Spots on upper surface dirty brownish, dull, lover surface clearly

brown, without distinct margin. Caespituli hypophyllous, punctiform, grayish white. Mycelium internal, colourless, hyphae septate, branched, formed stromatic, colourless to yellowish-ochraceous, subglobose or slightly lengthened hyphal aggregations in leaflet tissues, 15–70(–75) µm diam. Conidiophores in small to moderately large fascicles, loose to usually dense, emerging through stomata or erumpent through the cuticle, erect, simple, straight, subcylindrical to geniculate-sinuous, continuous to sparingly septate, hyaline or subhyaline, smooth, 6–65(–70) × 2.5–5 µm. Conidiogenous cells terminal, colourless, enteroblastic. Conidiogenous scars thickened, darkened. Conidia colourless, catenate, chains occasionally branched, produced enteroblastically, single conidia smooth to faintly rough, ellipsoid-ovoid, subcylindrical, fusiform, 10–30(–35) × 4–5(–6) µm, unicellular or with a single median septa, not narrower at the septa, ends rounded or somewhat attenuated.

Specimen examined – **TURKEY**, **Bursa Province**, Gemlik district, Haydariye village, near Şelale, alt. 700 m, on living leaves of *Hypericum calycinum* L. (*Clusiaceae*), in hornbeam–beech (Carpineto-Fagetum) forests, 18 Nov 2010, coll. E. Hüseyin G-06.

Discussion

In 1956, the Russian mycologist M.K. Khokhryakov collected a *Hypericum* sp. with *Ramularia*-type sporulation in the Russian Far East, which he deposited in LEP as *Ramularia* sp. Braun (1998: 170) described *R. hypericicola* as a new species based on this material. *Ramularia hypericicola* is undoubtedly a rare anamorph of *Mycosphaerella*. The present record from Turkey represents the second collection of this species and the first on a known host, *Hypericum calycinum*.

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